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ABSTRACT

A 1973 international management seminar, sponsored by the Organization for Economic Cooperation and Development, provided an opportunity for representatives from various countries to share innovations in work organization. It appears that attitudes toward work and working life are changing throughout the industrialized world; part of the dilemma is that values and attitudes are emerging too slowly or pulling in opposite directions. Seminar discussions reflected the need to balance improved productivity with increased job satisfaction and to "debureaucratize" work organization. The selected cases presented at the seminar represented many experimental changes in various parts of the industrialized world. Strategies for change in the case reports could be categorized as: (1) changes in management attitudes and functions, (2) changes in job design and work organization on the shop floor, and (3) changes in formal representative systems. Various strategies exemplified by the cases could be traced to different schools of behavioral sciences. A common denominator to all changes was that in some way they implied broader employee participation in management functions. Dissemination of innovations at national and international levels is a gradual process, and national productivity institutes, international enterprises, and international conferences play important roles. (The 75 participants from 23 countries are listed.) (EA)

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ADVANCES IN WORK ORGANISATION

INTERNATIONAL MANAGEMENT SEMINAR

Paris 3rd-6th April, 1973

FINAL REPORT

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Paris 1974

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by
Reine Hansson

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PREFACE

It has become clear in recent years that some significant changes have been taking place, in advanced industrial societies, in the attitudes to work and to the workplace, such changes being associated with the widespread demands for improvement in the quality of working life and for workers' participation in management.

With the co-operation of the Business and Industry Advisory Committee and the Trade Union Advisory Committee to OECD, a number of these changes have been, or are being, examined in various activities being conducted under the OECD Labour Management Programme, starting with a Management Experts' Meeting in May 1971.(1)

From the outset of the exploration it was apparent that a potentially valuable response to the changes lay in the area of reorganisation of work, taking advantage of the considerable strides made, over the last 30 years, in our understanding of the social sciences, and particularly the concepts of the semi-autonomous work group,(2) job enrichment and participative management. In the light of press reports and other indications of interesting innovations in work organisation in a number of OECD countries, it seemed useful to examine some of them and to evaluate them from the points of view of improving workers' satisfaction with their work and of increasing productive efficiency; this would also elicit the lessons that could be learned

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1) See R.W. Revans, The Emerging Attitudes and Motivations of Workers, OECD, Paris, 1972. Subsequent activities relevant to the subject have been (or will be):

International Conference on New Patterns for Working Time (September 1972).

Regional Joint Seminar on Prospects for Labour-Management Co-operation in the Enterprise (October 1972).

Management Experts' Meeting on Problems of Women's Work in Modern Society (May 1973).

Management Experts' Meeting on Absenteeism and Labour Turnover (October 1973).

Regional Trade Union Seminar on the Quality of Life at the Workplace (May 1974).

Joint Experts' Meeting on Some Aspects of the Industrial Environment of Work (December 1974).

Management Seminar on Workers' Participation (March 1975).

2) As early as October 1969 an OECD Multi-National Study Group had visited Norway to look at some of the innovations made there in this regard, under the auspices of the Norwegian Co-operation Council.

from the problems encountered and the factors which appeared to be involved in success or failure. It also seemed desirable to make these experiences more widely known.

On this reasoning, a Management Seminar was arranged in consultation with the Business and Industry Advisory Committee to the OECD. It was decided that an academic kind of investigation was not called for, but rather a practically-oriented activity in which, so far as possible, managers should report, for consideration mainly by other managers, innovations in which they had themselves played some part. Though not all the rapporteurs chosen were in fact managers within enterprises, all had been directly concerned with innovations in work.

The Seminar was held in Paris on 3rd-6th April, 1973, and was attended by 36 delegates, with representation from all the then 23 Member countries. The total number attending, including observers from governments and from other international organisations, was 73.

The collected papers for the Seminar have already been published.(1) The present Preface introduces the Final Report on the Seminar, prepared by Mr. Reine Hansson, of the Swedish Council for Personnel Administration.

Mr. Hansson's task was to review the Seminar papers and proceedings in the light of the current understanding of the human aspects of the organisation of work. His report describes the development of thinking and practice in the field. He analyses the cases reported to the Seminar, their results, the lessons embodied in them and their implications for management, supervision and workers. He also considers the role of the social scientist in relation to innovation in the enterprise. But Mr. Hansson's report speaks for itself: there is no need to recapitulate it here.

As with other OECD Labour-Management Programme publications, the contents of this report are the responsibility of the author and should not be taken as representing the views of the OECD.

Taking a global view of the subject, the total volume of changes of the kind reported to the OECD Seminar as yet affects only a tiny proportion of the working population. Nevertheless, that proportion is growing in most advanced industrial countries and successful innovations are having an appreciable effect on managerial styles and policies in quite a number of enterprises. It seems that, if properly handled, the concepts discussed do offer the opportunity in respect of a wide variety of work and workers, for increasing both job satisfaction and operational efficiency. It is hoped that, by making such experiences more widely known, the report which follows will stimulate interest in the potentialities of innovation in the organisation of work.

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1) "Advances in Work Organisation", Supplement to the Final Report, OECD, Paris, 1973.

FINAL REPORT ON THE SEMINAR

by

Reine Hansson

Swedish Council for Personnel Administration

Is work alienation a necessary consequence of our attempts to maintain or increase economic efficiency? If not, how then can human needs, satisfactions and interests be met in the work situation without sacrificing economic goals?

This is the basic problem in all the cases presented at the Seminar. The reports describe various "advances in work organisation", the stated purpose of all of them being to seek ways of co-ordinating and regulating the human contribution to work organisation that will ensure both the attainment of economic objectives and the satisfaction of human needs and interests.

PURPOSE OF THE SEMINAR

The Seminar had the following terms of reference:

- to assess the practical achievements so far and evaluate the different techniques used;
- to ascertain which techniques might be most readily usable in other countries and are most likely to promote the objectives of OECD; and,
- to provide a means of bringing successful experiences to wider notice.

With these terms of reference in mind, the cases presented and the discussions at the seminar provide rich material for assessment.

The nature of the problem, however, does not lend itself to simple rule of thumb solutions. It would be an oversimplification to believe that any one organisation would be outstanding compared with others, generally speaking. It would also be an oversimplification to assess any one technique for organisational redesign as generally superior to other approaches.

The practical achievements presented and the various means used to reach them therefore must be assessed in accordance with the societal and industrial backgrounds of the different cases.

This does not mean, however, that there are just specifics and no generalities to be found in the cases and the seminar discussions. It merely means that to assess the practical achievements and evaluate the techniques used is a complex affair and presented a serious challenge to all concerned.

WHAT CAN BE ASSESSED?

Changes in work organisation of the kind described at the Seminar are merely one way of tackling the problems of industrialised societies, but they do not solve the problems, not even those of work alienation. They are not a panacea, as many advocates of job enrichment, work structuring, management by objectives, autonomous work groups and the like might lead one to believe. It would be more accurate to regard advances in work organisation of the kinds reported as a stage in a very long development process in industrial societies.

Work organisation is part of society. Changes in work organisation, the ways in which people are co-ordinated and their efforts regulated and integrated in the organisation are adaptations to other developments, whether existing or projected, in industrialised societies.

According to the managing director of Volvo of Sweden, what that firm is now doing about advances in work organisation is being done so that the firm will be able to stay in business for even ten years.

The reports submitted to the Seminar describe various adaptation processes in which changes in work organisation have been effected gradually over a number of years. There is very little description of the different "techniques" used in these changes, while the practical achievements described are advances in <u>work organising</u> rather than advances in <u>work organisation</u>. This view was expressed in the discussions.

Participants asking for a description of the situation before and after the changes and for techniques, solutions and results by way of "evidence" were told by the rapporteurs that the cases were not experiments in the traditional sense, intended to prove hypotheses, but rather demonstrations of how work organisation was gradually adapted to the direct or indirect claims of the employees, and to the actual possibilities (or options).

For these reasons the suggestion made by one of the participants that the cases and discussions should be reported in the form of 25 or so pieces of "good advice on how to improve your company" cannot be considered relevant.

The question is not as simple as that. It might have been if advances in work organisation meant nothing more than the application of management techniques, but it is more complex, as the case reports and the discussions clearly showed. It is a process of change in work organisation affecting relations between people and relations between people and their production technology. It is a process whereby interrelated systems, including the established attitudes and values of the people involved, are changed. As nearly all the

case rapporteurs pointed out, this is a difficult and time-consuming process and one which includes continuous learning by the individual and groups concerned.

The industrialised world is not, however, a homogeneous whole, but varies in many respects, such as technological progress, industrial relations and the educational level of the labour force. Because of this the responses to developments in society such as changes in work organisation will have different forms, content and meaning in different parts of our industrialised world and will even differ from company to company in the same country. The case reports illustrate these differences and stress different aspects of the process of adapting work organisation to society.

If the advances in work organisation described at the Seminar can be seen as the implementation of a process of adapting the organisation to the outside world, there is greater scope for making the assessment mentioned in the terms of reference.

WHY ADVANCES IN WORK ORGANISATION ARE IMPORTANT

Management in the industrialised countries has always been concerned to find methods of work organisation which will ensure better use of "human resources". In the past few decades, however, new aspects have been added to the problem of work organisation. This process is developed in some countries and just emerging in others.

The aim of advances in work organisation is not only to ensure better use of "human resources" for economic growth, but also to increase job satisfaction or, more generally, to improve the quality of working life. This would seem to mean that job design and work organisation should be tackled in such a way as to provide a better physical working environment, make work more meaningful and the co-ordination and regulation of work organisation less authoritarian, and allow more employee participation in management functions of different kinds. Various factors underlie the demand for changes in work organisation in this direction.

New attitudes to work

Throughout the world the attitudes of young people can be seen to differ from those of the present labour force. In the introduction to the OECD report on the emerging attitudes and motivations of workers(1) we read that "the worker born after 1945, whose generation

1) Revans, R., The Emerging Attitudes and Motivations of Workers, OECD, Paris, 1972, p.7.

will make up the majority in industrial employment in not many years' time, is usually better educated than his father and his education has often been different in kind too. There has been more emphasis in the post-war world on teaching children to develop their own personality and to question what they find in society, and less emphasis on obedience and conformity. The 'new' worker has acquired the expectation that year by year he will enjoy increasing material prosperity. If adversity strikes, he is likely to expect that the social security services will offer assistance. And he has rarely had experience of unemployment of the levels that were common between the two world wars which, among other things, made workers willing to accept without much question the discipline of industrial work."

These generation differences in attitudes and values are, however, not confined to workers. "Workers are not alone in their changed attitude to industry. Young managers have grown up under similar influences and they too are likely to have a different attitude to their work and to the nature of industry than their predecessors"(1).

The report by Revans also gives examples of the practical effects of these changes in attitudes at the workplace. Reports on systematic studies of attitudes to work in America are contained, inter alia, in Work in America, Report of a Special Task Force to the Secretary of Health, Education and Welfare, 1972. Referring to a recent survey using a representative sample of American workers, the authors state that what the workers most want is to become masters of their immediate environments and to feel that their work and they themselves are important - the twin ingredients of self-esteem. "An increasing number of workers want more autonomy in tackling their tasks, greater opportunity for increasing their skills, rewards that are directly connected to the intrinsic aspects of work, and greater participation in the design of work and the formulation of their tasks"(2). (This does not mean that the American worker is not concerned about the level of remuneration, economic security and personal health and safety. It seems to mean that work autonomy questions are acquiring greater prominence as a desirable quality of working life.)

Japan, with its rapid industrial development, has a very definite attitude shift between generations, as reported by Takezawa(3). For instance, older workers are more concerned about employment security, income, housing and career development, while the younger generations are more concerned about social recognition and self-realisation.

1) ibid. p.7.

2) ibid. p.13.

3) Takezawa, Shin-Ichi, Changing Worker Values and their Policy Implications in Japan, Report to the International Conference on the Quality of Working Life, 1972. To be published by MIT Press.

There are reports from the Scandinavian countries of difficulties in inducing younger persons to accept employment in industry. This is especially the case in Sweden, where certain industries even find it difficult to recruit nationals at all, despite relatively high wage levels and a good standard of employment.

Many more surveys and examples could be quoted.

Doubts have been expressed as to whether attitudes and values in employment are in fact changing as much as has been claimed. In a number of contexts it has been asserted that this is more an invention of social scientists and journalists than a real problem. Perhaps reports and statements have given unduly drastic illustrations of the problems involved. What does seem clear, however, is that attitudes to work and working life are changing throughout the industrialised world. It also seems to be well established that shifts in values concern the status of the family, the role of women, the use of leisure time, etc., as well as employment.

The dilemma

The real dilemma here is not, however, the emergence of new values and attitudes, but possibly the fact that this emergence is too slow. As has been shown by Trist(1), the post-industrialised society is already structurally present in the more advanced countries, but we do not have a corresponding occurrence of change in cultural values, organisational philosophies and ecological strategies, at least not at the speed required.

The post-industrial society is structurally evident in, for instance, the technological transition from power assembly line technologies to information-processing technologies, a transition which makes possible the management of larger systems.

Larger and larger enterprises, internationalisation and increased capitalisation of enterprises plus the expansion of information-processing technology within the context of existing cultural values and organisational philosophies widen the gap between decision-making and the rank and file worker.

A mismatch

As a result the forces underlying the changes in attitudes and those underlying the organisational developments are apparently pulling in opposite directions. This mismatch is creating tension and, as Trist puts it, "until we recognise that we are not still industrialists, we cannot develop the capability, though we have the

1) Emery, F. E. and Trist, E. L. Towards a Social Ecology, Plenum Press, 1973.

resources, to shape our future to good advantage. To turn the mismatch into a good match constitutes the challenge before all of us."

CRITERIA FOR ADVANCES IN WORK ORGANISATION

The meaning of "advances in work organisation" was not explicitly defined at the Seminar.

Management in industry gives and always has given serious attention to the question of organising work in order to ensure better use of "human resources", making the firm more competitive and able to stay in business.

Advances in work organisation have always been a feature of the expansion of industrial communities. The criterion of progress and development in work organisation has been improved profitability. Advances in work organisation which have taken place in the course of this development have brought about extraordinary increases in productivity and a corresponding raising of material standards in our societies. The predominant criterion - greater productivity and profitability - has not only resulted in more goods and services at reasonable prices for the members of society, but has also led indirectly to changes in living conditions and values generally.

Increased productivity creates new problems

These changes in living conditions and values create problems in employment. Recruiting workers for industrial work becomes harder, short-term absenteeism increases, personnel turnover costs increase and protests of various kinds, from go-slows, walk-outs and sit-down strikes to sabotage of goods and materials, are reported more and more frequently.

In other words, increased productivity, the criterion used for advances in work organisation, has contributed to changes in human living conditions which in turn involve new requirements and new problems for work organisation. These changes have made the interdependence between work organisation and society outside work organisation more noticeable. Besides producing goods and services, work organisation also produces living conditions for people and so contributes to changes in attitudes and behaviour. This in turn has led to general and more outspoken questioning of the criterion for advances in work organisation, i.e. increased effiency, and of the manner in which work is organised and the means used to co-ordinate and regulate the input.

Increased productivity - greater job satisfaction

The case reports and the discussions do not specifically question the use of improved productivity as a criterion for advances in work organisation, but the need to qualify this criterion is apparent throughout. For example, work organisation should achieve increased productivity in such a way that work is consistent with people's needs and interests and that greater job satisfaction is obtained. Some countries have taken the matter a step further and believe that the operations of the enterprise should be designed to ensure greater job satisfaction besides improving productivity. These objectives, greater productivity and greater job satisfaction, are closely bound up with each other. At the same time, says the 1936 Agreement on the promotion of collaboration between management and labour in Sweden (between the Swedish Employers' Confederation, the Confederation of Swedish Trade Unions and the Central Organisation of Salaried Employees), it is clear that each of them is in itself a desirable end.

The 1972 Agreement on rationalisation between the Swedish Employers' Confederation and the Confederation of Swedish Trade Unions makes increased productivity, greater job satisfaction, a better working environment and security of employment the objectives of advances in work organisation and states that, although these goals naturally intertwine, it is also clear that each is worth aiming at in its own right.

Some of the speakers at the Seminar felt the need for a further variant in the discussions, i.e. that of regarding the satisfaction of human needs and interests as the objective of work organisation and regarding the pursuit of productivity and profitability as a qualification.

The decision as to whether job satisfaction will be treated as a qualification to be taken into consideration in designing work organisation or as one of the objectives of work organisation is quite an important one. The difference reflects differences of evaluation which are likely to influence the choice of management philosophy and the methods adopted for making advances in work organisation.

SCIENTIFIC MANAGEMENT AND BUREAUCRACY AND SOCIAL SCIENCE

Improved material standards and economic prosperity are the fruit of progressive specialisation and development of work organisation systems.

Existing management philosophy and principles of work organisation in industrial work have a very long history. The advantages

of the division of labour were discussed in the 18th century by Adam Smith. They have been applied on a major scale since the end of the 19th and beginning of the 20th centuries. F.W. Taylor published his book "The Principles of Scientific Management" in 1911 and Ford introduced the mass production of automobiles in 1912. The basic principles of management and the organisational philosophy of those days live on in industrial practice and in various schools of thought. Organisational doctrine emphasizes two partly different definitions of the concept "work organisation".

Scientific management

One definition, the organisation of jobs, what is to be done, in what order it is to be done, how jobs can (or should) be divided, how much time different component operations take (or should take), etc., has been studied and made the subject of norms, chiefly by engineers specialising in production technology.

Bureaucracies - formal organisation

The other definition of the concept "work organisation", i.e. the organisation of the workers, has been treated mainly by economists and administrators, who have emphasized organisational questions such as ownership, leadership, superior - subordinate, span of control, functional organisation with specialist bodies, production worker or staff, etc.

Both schools of thought meet in the problems of how individuals and jobs are to be co-ordinated and regulated. Various methods have eventually been developed and refined for this purpose, e.g. methods for the planning, division and allocation of jobs, the assessment, supervision and apportionment of rewards and punishments, and methods for the selection and training of workers. Control and co-ordination have been further confined to specialist functions and management. The gradual development of such methods made it possible to step up progressively the division of labour and specialisation. Goods, materials and machines have been standardized and made the subject of norms. Even the workers have undergone "standardization", as is apparent from concepts such as "standard worker", "standard method", "standard performance" and "standard time". The main purpose of this development has been to make industrial operations more predictable and more economical - to make it possible to deliver the right goods of the right quality at the right time and at the right price.

Design principles

The main principles applied in designing work organisations are "standardization" of the various "components" to ensure interchangeability, "redundancy of parts" (or components)(1). To ensure that the organisation can be flexible and cope with changes in the environment "the components" must be co-ordinated and regulated. To this end there are specialised "managerial components" which are hierarchically superior parts of the organisation, with defined powers to reward and punish.

Depersonalisation

Because of these design principles the development of work organisation in industry has meant greater and greater depersonalisation. Instead of playing a dominant role in the production process the individual has become an appendage in a complicated technological process, responsible for certain predetermined operations. The principles of interchangeability, redundancy of parts and specialised co-ordination and regulation functions apply not only to manufacturing activities. The bureaucratisation of administrative operations and information-processing of different kinds are based on the same principles and have similar depersonalising consequences.

The advances and application of information technology tend to reinforce this development and even extend it to new categories of workers. This trend is illustrated not only by the progressive "proletarianisation" of various categories of clerical workers but also by development in hospital administration and attempts to replace the skill and intuition of the medical profession by computers in the making of diagnoses.

FROM HANDICRAFTS TO INDUSTRIAL ORGANISATION

Hedberg has illustratively described the change in the production process with particular emphasis on changes in managerial functions(2). In the artisan organisation the individual applies his own working methods, which he has learned from the master craftsman, and uses his own tools in working the materials to create his product.

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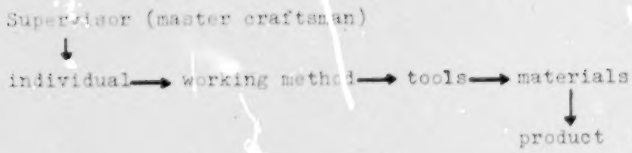
1) Emery and Trist, op. cit. p.73.

2) Hedberg, M., Organisation - Technical and Social (published in Swedish), in C. von Otter (ed.), Labour in Crisis and Change, Rabén and Sjögren, 1971.



In the original types of manufacturing processes there is a certain division of labour, and several individuals process the same material successively. This diminishes the individual's influence on decisions as to the design, quantity, quality, etc., of the product.

In these organisational patterns supervision was a matter of personal influence between supervisor and worker, and standards for pace of work were arrived at by means of the same social contacts.

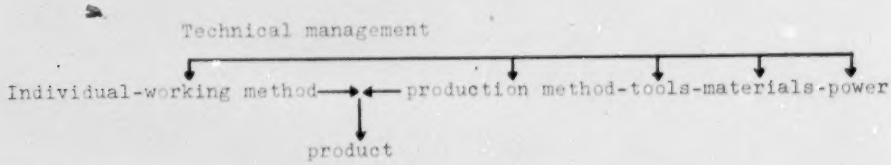
The development of sources of energy and machines made it possible to transfer tools from the individual to the machines. The workers could now be organised around the machine. This restricted the individual's freedom to choose and vary his working methods and pace of work.

As mechanisation progressed, more and more of the tools were transferred to machines, which also increasingly determined working methods and pace of work. The craft worker became a semi-skilled worker or operative. In this way the operative was regarded essentially as a component in the technical production machine.

Management becomes technical management

Management, too, has changed. It has become specialised in different functions in the technological and production field, and can now be termed a technical management which co-ordinates and regulates operations by means of material utilisation, choice of machines, planning systems and time norms.

The difference between the artisan organisation and the highly developed industrial organisation can be seen by comparing the following diagram with the preceding one:



EARLIER OPPOSITION TO TECHNICAL SYSTEM AND TECHNICAL MANAGEMENT

The workers tried in many ways to resist the development of the technical system and the domination of the technical management. At

an early stage they attacked new machines and tried to destroy them, seeing them as a threat to their livelihood. More or less organised attempts were also made in early days to influence various conditions of employment, such as pay and hours of work. Competition between workers for jobs, company management and technical management resistance to improvement in working conditions and conditions of employment created a need for more concerted action by the workers.

Trade unions - technical management

Workers' associations and trade unions, "the social organisation of labour", were formed.(1) Thus social organisations of working individuals appeared in response to technical management and the organisation of jobs. For this reason the trade unions were regarded for a long time as something extraneous to the entreprises, which were identified with the technical economic system."

As its defensive measures, the social organisation had recourse to various ways of restricting production, especially strikes.

In the actual production process defensive reactions were directed against various factors, such as individual supervisors or work study men, on the one hand, or productive systems, e.g. various work study methods, time-recording routines, etc., on the other. Quota restriction and goldbricking are probably a universal phenomenon in production processes involving piecework and some types of individual pay incentives.(2)

With the growth of the trade union organisations, questions concerning conditions of employment came to be settled in negotiations between representatives of these organisations and the technical management or company management.

Conditions of employment - conditions of the work itself

Conditions of employment, i.e. pay, hours of work, annual holidays, pensions insurance and other types of insurance, etc., were the first to become the subject of trade union activity. While there were negotiations on these questions, less attention was paid to actual working conditions, which involve the physical environment, i.e. noise, heat, light and fumes, on the one hand, and the psychological environment, i.e. job constraint, monotony, degree of meaning, isolation, etc., on the other. These questions have become the subject of consultation and discussion between employees and

1) Hedberg, op. cit., p.41.

2) Lupton, T. (ed.), Payment Systems, Penguin Modern Management Readings, 1972; Baldamus, W., Efficiency and Effort, Tavistock Publications, 1961.

management, and in some cases have indirectly become the subject of negotiations, e.g. when they affected conditions of employment. By and large, however, they are still subject to the authority of the technical management and form part of management prerogatives.

CRITICISM OF TECHNICAL MANAGEMENT BY BEHAVIOURAL SCIENTISTS

Ideas about, and the desirability of, standardized production conditions which have been developed in the technical management also came to affect the individual workers. Fatigue, motion economy, the siting of rest breaks, etc., were studied early on with a view to investigating, understanding and making better use of the labour force. The influence of the external environment on output was also studied.

"Physiological machine"

The most interesting studies in this field were those carried out in the United Kingdom in the first world war under the direction of the Industrial Fatigue Research Board. Roughly speaking, these studies were aimed at the working individual as a physiological production factor. The same thinking led to the start of the equally classical and famous studies at the Western Electric Company's Hawthorne Works in Chicago. The aim was to determine the connection between lighting intensity and output so as to calculate optimum lighting intensity. This proved impossible, despite a well-executed experimental design. The individuals did not react as anticipated. Output increased both when lighting was intensified and when it was reduced. New experiments were planned and carried out in order to explain the previous findings, and it was discovered that the individuals became involved and motivated by the experiments in which they participated. One very important feature was the social contacts that developed between the individuals in the work groups and the researcher and technical management conducting the experiments. The interpretation we can now make of these early research findings is that the human image underlying the lighting experiments and the technical management's expectations as to the findings were oversimplified. The individuals did not react as "physiological machines", but as factors of participation in the experiments themselves and also, to a certain extent, in the designing of the experiments decisively affected the results.

"Social man"

The results of these studies(1) stimulated development of research and theorisation on the functions, viewpoint and working methods of technical management. The foundations were also laid for the "Human Relations School".

Considerable interest began to be shown in the social system, the working individual, the composition of work groups, relations between different categories of workers and what are called "leadership styles". Research experiences also emerged over the years and were used in personnel administration, leadership training and consultation in enterprises.

The main human image in this development was termed "social man" by Schein.(2) This implies that man is motivated primarily by social needs. As far as designing the work organisation is concerned, this means that more attention should be paid to informal groupings, as man is more responsive to the social forces of the peer group than to the incentives and controls of management and, on the other hand, to developing a leadership style matching up to the social needs of the subordinates.

This development also led to a study of job satisfaction and the connection between it and productivity. The Human Relations School's "social man" was eventually seen as an oversimplified human image and new ideas on work motivation were formulated.

Self-actualising man

In this connection, Maslow(3), McGregor(4) and Herzberg(5) had a profound influence on the understanding of work motivation and later developments. Schein (op. cit.) called the human image in this case "self-actualising man". This implies that human needs constitute a hierarchical system, ranging from simple needs for survival at the bottom end, via social needs, self-esteem needs and needs for autonomy to self-actualisation needs at the top. Once lower needs are to some extent satisfied, higher needs begin to make themselves felt. This human image makes it important for the work organisation to appeal to higher needs. Self-actualisation does not necessarily clash with the objectives of work organisation. On the

1) Roethlisberger, F. J. and Dixon, W. J., Management and the Worker, Harvard University Press, 1939, and Blumberg, P., Industrial Participation; the Sociology of Participation, Constable, 1968.

2) Schein, E. H., Organisational Psychology, Prentice-Hall Inc., 1965.

3) Maslow, A., Motivation and Personality, Harper, 1954.

4) McGregor, D., The Human Side of Enterprise, McGraw-Hill, 1960.

5) Herzberg, F. et al., The Motivation to Work, Wiley, 1959

ntrary, according to this thinking the employee can voluntarily integrate his own goals with those of the organisation - if given a chance.

A number of researchers believe that the achievement of advances in work organisation which will give employees greater motivation for self-actualisation in work is mainly, or at least initially, a question of a change in managerial style. Others focus their attention on organisational structure and job design.

In the former group McGregor, Blake(1) and Likert(2) have influenced opinion by describing different managerial styles and also by discussing ways of changing managerial styles.

Many of the changes reported at the Seminar were influenced by these authors.

The latter group includes Herzberg, whose two-factor theory(3) influenced various attempts to structure jobs in order to make them more challenging (e.g. job rotation, job enlargement and job enrichment). Herzberg is also mentioned in many of the case reports and his works have influenced organisational developments in various countries.(4)

Socio-technical systems

At the end of the 1940s and into the 1950s a series of studies were carried out on different types of work organisation and their psychological and social consequences in British coal-mines.(5)

In this connection researchers from the Tavistock Institute of Human Relations in London developed a methods which came to be called "socio-technical systems analysis". One of the fundamental ideas was that the work organisation could be viewed as a socio-technical system. If in this system an attempt was made to optimise the technical component at the expense of the social component (scientific management) the result for the system as a whole would be sub-optimal, and the same was true of any attempt to optimise the social component at the expense of the technical component (human relations). What this method aimed at in the development of work organisation was therefore a joint optimisation of the socio-technical system. It was also pointed out that a given work organisation is not in itself

1) Blake, R. R. and Mouton, J. S., The Managerial Grid, Gulf Publishers, 1961.

2) Likert, R., The Human Organisation, McGraw-Hill, 1968.

3) Herzberg, op. cit.

4) For an overall view of these developments see, inter alia, Lupton, T., Management and the Social Sciences, Penguin Modern Management Readings, 1971.

5) Bamforth, K. W. and Trist, E. L., Some Social and Psychological Consequences of the Longwall Method of Coal Getting, Human Relations 4, 1951, pp.3-38, also reproduced in Pugh, D. S. (ed.), Organisation Theory, Penguin Modern Management Readings, 1971.

a necessary consequence of a particular technology, but that a particular technology allows an organisational choice.(1) The experiences were further developed, inter alia in the Norwegian industrial democracy project of 1962.(2)

Through continuing research and practical application this method was widely disseminated first in Scandinavia, the Netherlands and the United Kingdom and later in the United States. The human image that recurs in this research is more complex than social man and self-actualising-man. Besides ability to learn and develop it also emphasizes human conflicts in autonomy and mutual dependence, relativity in attitudes and values, interaction between individual and work organisation, etc.

Because of the system-orientated method and the conception of enterprises as open systems, great attention is paid in this research to reciprocity between enterprise organisation and conditions in society generally.(3)

This leads in turn to a concern about our societal developments, the post-industrial society(4) and the design principles for work organisation which are possible and may be desirable in this context.(5)

It is claimed that the Human Relations Movement of the 1940s and 1950s and the job enrichment of the 1960s, though aimed at de-bureaucratisation, nevertheless accept the design principles of scientific management and bureaucracy for work organisation, but these authors do not think that de-bureaucratisation is enough. The real aim is that men will increasingly set for themselves a positive target of redesigning their work organization on the principle of democratising work.

The Norwegian experiments with semi-autonomous groups of the 1960s are, like the development in Sweden in the late 1960s, part of this development. Not only the Swedish cases described at the Seminar but also the changes described in the General Foods, Shell and Bamshoeve reports have been influenced by this research.

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1) Trist, E. L. et al., Organisational Choice, Tavistock Publications, 1963.

2) Emery, F. E. and Thorsrud, E., Form and Content in Industrial Democracy, Tavistock Publications, 1969.

3) Emery, F. E. and Trist, E. L., The Causal Texture of Organisational Environments, Human Relations 18, pp.21-32; also reproduced in Emery, F. E. (ed.), Systems Thinking, Penguin Modern Management Readings, 1969.

4) Emery, F. E. and Trist, E. L., Towards a Social Ecology, Plenum Press, 1973.

5) Emery, F. E. and Thorsrud, E., op. cit., and Emery and Trist, op. cit.

INTEREST IN ADVANCES IN WORK ORGANISATION

The cases presented at the Seminar are a selection from a very large number of experiments in change taking place in various parts of the industrialised world.

Company interest

In the Scandinavian countries several hundred companies are investing time, effort and money in developing their work organisation in order to improve the quality of working life. In the Netherlands, too, great efforts are being made in this field. In the United States much is being done to change work organisation, particularly in the multinational companies.(1) As participants in the Seminar pointed out, quite a lot is being done in Germany also to change work organisation, e.g. in the electrical and chemical industries.

Government interest

Developments in this field are being supported by government agencies in many of the OECD countries. The Norwegian Government, for instance, has taken an active part in development since the inception of the "Industrial Democracy Programme" in the early 1960s.(2) In Sweden the Government expanded its efforts to promote study of the quality of working life in the late 1960s, as did the opposition parties, since they foresaw that conditions in working life would become a critical issue in the 1970s.

Government interest in the problems of working life is also evident in the United Kingdom, where the Department of Employment recently published a report on the quality of working life.(3)

In the United States a report entitled "Work in America" was prepared for the Secretary of Health, Education and Welfare and published in 1973. The appendix to this report lists a number of better-known "case studies in the humanisation of work". In 1972 a Bill (the Worker Alienation Research and Technical Assistance Bill) proposing the expenditure of up to $10 million of public funds a year on technical assistance and demonstration projects was submitted to Congress.

In France a Bill has been submitted that will provide for the setting up at both national and enterprise level of organisations responsible for improving working conditions, including work

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1) Taylor, J. C. et al., The Quality of Working Life, an annotated bibliography, Center for Organizational Studies, University of California, Los Angeles, 1972.

2) Emery and Thorsrud, op. cit. 1969.

3) Manpower Papers No.7, Her Majesty's Stationery Office, 1973.

organisation. In Australia the Government has shown increasing interest in this field by sending out study groups, activating committee work and stimulating efforts to bring about change in various companies.

Interest shown by employers' organisations and trade unions

The main employers' and workers' organisations in different countries have also shown increasing interest in work organisation. In the Scandinavian countries employers' associations and trade unions are jointly active in bodies such as the Co-operation Council in Norway, the Development Council in Sweden and the Co-operation Board in Denmark, which promote collaboration between employers and employees at enterprise level, by means of information, consultation and research. These activities are provided for in collective agreements between the organisations (including the white collar unions in Sweden). The Scandinavian employers' associations also engage independently in activities promoting changes in work organisation. Sixty or so different reports (about ten of which are available in English) have been published by the Swedish and Danish employers' associations.

In the United Kingdom the Confederation of British Industry and the Trades Union Congress are represented together with the Government on a committee recently set up to discuss problems relating to quality of working life. Developments in the various countries raise certain problems for the unions and some countries report increased union concern about the role they are to play in advances in work organisation.

SELECTION OF CASES PRESENTED AT THE SEMINAR

The selected cases are taken from the private sector in various OECD countries. They concern both large firms and small ones, manual workers and clerical workers, and are representative of different technologies.

The cases were selected by a planning committee as being among the best documented, but they are not to be seen as a representative sample of what is going on in the sector concerned. They are merely examples or demonstrations of different efforts or innovations aimed at changing work organisation in order to improve both productivity and job satisfaction. They describe different approaches, such as highly developed consultative procedures, productivity bargaining, job enrichment with or without technological changes, semi-autonomous work groups, individual programmes, etc., to the problem of changing existing types of work organisation in the desired direction.

The cases should not be regarded as experiments

The rapporteurs stressed that the cases presented were not experiments in the traditional sense, in which the subject is treated experimentally, the findings investigaged and the effects evaluated. Many of them expressed the view that organisational changes do not lend themselves to experimentation of this type. As was pointed out in the discussions, the cases are, in fact, instances of management and management of change. They show how managements decided what measures would hopefully lead to desired consequences, and both the positions adopted and the measures taken are influenced by behavioural science experiences.

In the cases selected and reported, changes in work organisation, i.e. changes in the way people and material resources are put together to perform work, have a common denominator of changes in management functions. The planning and allocation of work, the co-ordination and control of human performance and the use of material resources have been changed in different ways and in varying degrees, but with the common objective of increasing participation in management functions.(1)

INITIATING THE PROCESS

General statements

There must be a reason for any change. All rapporteurs made mention in their papers or in the discussions of different overlapping reasons for making changes in their cases, such as a desire to ensure more effective use of "human resources", to improve productivity and job satisfaction, to improve industrial relations, to meet the psychological needs of the worker, to humanise work, to promote democratisation of the workplace, etc. The importance of these general wishes or motives in the change processes seems to be not in their having initiated the changes but in their being formulations used as a guide in the search for solutions to more specific problems.

Specific problems

Specific problems do, however, seem to have been the driving force in nearly all the efforts to bring about change. These problems are mentioned in the case reports and were instanced in the discussions as being virtually prerequisites for the starting of

1) For a discussion of the concept of participation, see Walker, K. F., Workers Participation: Concepts and Reality (mimeograph), International Institute for Labour Studies, Geneva, 1970.

operations. In the British cases one of the main problems mentioned is industrial unrest, one company having had five walk-outs a week. In the Swedish garage case the problems were a long history of personnel turnover combined with unsatisfactory workmanship and poor customer service. In the Saab-Scania case there were existing and foreseeable difficulties in recruiting labour for assembly jobs. In the diversified glassworks business was not too good and work planning was made rather difficult by the wide range of products in the programme. This meant large quantities of material under production or "queuing up", and hence long through-put times and a lot of tied-up capital. In the Philips case report we read that production was more or less out of control because of the wide range of products and the process-bound nature of production. The problems mentioned in the Olivetti case report are structural changes in commercial markets and especially in product technology. According to the Norwegian case report the problems at the time when advances in work organisation were initiated were challenging technological developments in shipbuilding and a high rate of personnel turnover combined with insufficient experience in the firm's design department.

Specific problems of the kind mentioned were felt to be "real problems", i.e. "natural reasons" for change. The problems as diagnosed or formulated in the different cases seem to have determined the initial phases of the changes, while the direction and continuation of the change processes seem to have been guided by the more general motives or ideals.

THERE IS MORE THAN ONE STRATEGY FOR CHANGE

It was stressed at the Seminar that the changes in work organisation reported were planned changes and that they had to be planned.

This does not mean, as one might think, that the changes were planned in detail by a specialist unit in the company or an external consultant and then applied in the organisation. What it does mean is that the operational aspects of the changes, the number of employees to be involved and the initiation of the process were the subject of planning.

The strategies mentioned in the case reports would seem to belong to three categories:

- one emphasising change of attitude and performance on management's part in order to effect changes in the organisation as a whole;
- one emphasizing job content and work organisation on the shop floor as a prerequisite for change, in order to promote the development of the organisation; and

- an integrated strategy which treats the whole organisation as the unit of change (cf. the discussion on behavioural science earlier in this report). As the cases developed, however, there seemed to have been considerable overlapping of these strategies.

Changing management attitudes

The Sadolin and Holmblad case(1) belongs to the first category. The report states that it is "up to management to take steps to bring about changes in the forms of management. The final responsibility rests with top management." Organisational change also conforms to the view that the best results will be achieved if the changes are inspired and controlled by top management. The strategy was further built on the involvement of middle management and local union authorities. The content of the changes reported is very much inspired by the writings of McGregor and Herzberg and entails changes in leadership style aimed at involving the employee in the work and in the responsibilities for work done and work to be done.

Starting on the shop floor

The ICI case is an example of the second type of strategy, that starting on the shop floor.

In 1965, according to the report, ICI initiated productivity bargaining culminating in a productivity agreement. In concluding the agreement the company sought to eliminate a number of restrictive practices that had grown up over the years and to break down barriers between different categories of workers in order to "use the work force flexibly in the ways which were required for the work in hand at the moment".(2) The productivity agreement was regarded as a tool that could be used by management to introduce changes in the work organisation. What was not considered in the early strategy was that the productivity agreement necessitated and/or conditioned changes in management attitudes and management functions. The changes within management echelons are reported as changes both in management structure and management style. Considerable efforts also seem to have been made to change management attitudes away from bureaucracy, authoritarianism and dominance towards "group leadership". The impact of McGregor, Herzberg, Likert and other representatives of the social sciences is mentioned in this context. In fact the strategy for change was focussed on shop floor problems but seems to have become more a strategy for management change. A report presented

1) Supplement to the Final Report on Advances in Work Organisation, OECD, 1973, p.25.

2) OECD, op. cit., p.20.

by the British Institute of Management describing developments in another part of ICI follows very much the same pattern.(1)

Shop floor and payment systems

In the Swedish cases reported on, the starting point is similar to that adopted by ICI. Even though no productivity agreement is involved a productivity-related pay and remuneration system is emphasized. In order to make changes in job design and work organisation it seemed necessary to move away from the individual piece-rate, the predominant form of remuneration in Swedish industry for some decades, towards bonus systems, which were often based on group production results. The next step after this was apparently discussions with the workers concerned about work organisation and possible ways of improving the work itself, work organisation and the working environment.

Direct participation by the shop floor

A special effort was made in these cases to secure the collaboration of all those affected by the changes and not merely that of (a few) representatives of the employees. This usually took the form of discussions in small groups under the foreman's chairmanship, an arrangement implying a clear-cut distinction between matters traditionally regarded as matters for negotiation between the management and the employees' organisations, on the one hand, and matters for co-operation, on the other, which include questions relating to job design and work organisation. Matters for co-operation were examined in the group discussions, whereas matters for negotiation were referred to the negotiating bodies.

This division of topics was explained in the discussions at the Seminar and it was emphasized that management had deliberately set out to stimulate direct co-operation between employees and itself and to avoid indirect co-operation through the employees' representatives. Having put aside "the value-loaded questions of wages and salaries from blocking the discussions" it was possible to "pave the way for organisational discussions".(2)

The Swedish case reports describe changes in work organisation on the shop floor. Little, if anything, is said in these reports about changes in management attitudes. It is, however, clear that the changes in job design and in management-employee co-operation

1) Mangham, I. L. et al., Managing Change, Management Guide No.3, British Institute of Management, 1971.

2) Swedish Employers' Confederation, Changing Work Environment, Work Organisation and Payment System at Orrefors Glassworks, 1970.

which they describe did lead to changes of attitude on both sides and even brought about changes in the working approach and working methods of supervisors and production technicians and others, but the starting point in the Swedish cases did not lead on to systematic work on planned change of management attitudes, as, for instance, in ICI. Even though the Swedish cases described are not experiments in industrial democracy, they are influenced by the experience acquired in the Norwegian democracy project during the 1960s. Experiments with autonomous groups in that country and the socio-technical pattern of thinking which was developed in connection with them (see the section on behavioural science earlier in this report).

The Olivetti case(1) also has as its starting point changes in job design and work organisation on the shop floor. The changes were preceded by internal discussions in various management groups and by negotiations with the unions to which the employees belonged. As in the Swedish cases described, the changes were based on production expertise in the enterprise. The changes in job design and work organisation on the shop floor are also reported to have led to changes in the roles and working methods of supervisors and production technicians and a new "inter-organisational co-operation" has grown up which also embraces the product constructors. Changes of the latter kind do not seem to have been planned but are apparently a result of the intended changes in job design on the shop floor.

The Bamshoeve case(2) is based on a socio-technical conception. Attention is focussed on shop floor problems, job design and work organisation, and an attempt is made to set in motion a process of learning. In the case of Bamshoeve this starting point involves emphasis on change being effected in such a way that the members of the organisation have a substantial say in the manner in which the project is conducted. The approach leads on incidentally to proposals for more comprehensive changes, in such areas as personnel policy, organisational policy, supervisor training, change of attitude, etc., and to certain measures in these sectors.

Integrated approach

The Shell UK case(3) and the General Foods case(4) are examples of an integrated strategy.

The strategy adopted in the Shell UK case is an integrated approach, which takes into consideration the environment of the enterprise in the broad sense of the term - how the enterprise can

1) OECD, op. cit., p.101.
2) OECD, op. cit., p.45.
3) OECD, op. cit., p.5.
4) OECD, op. cit., p.89.

react to changes in its environment and how this will affect the internal organisation of people and material resources.

The strategy concerned employees at different levels of the enterprise and involved:

- formulation of organisational objectives and corporate philosophy;
- examination of these at all levels within the organisation and with trade union representatives;
- appraisal of consequences for the organisation and need for organisational changes;
- analysis of various plants based on a socio-technical approach; and changes in job design and work organisation in various plants.

A full account of these activities is given in Paul Hill, Towards a New Philosophy of Management, Gower Press, 1971, and one of the plant-level cases is described by its production manager, D. W. E. Burden, in A Participative Approach to Management, International Conference on the Quality of Working Life, 1972.(1)

The strategy of change in Shell UK was worked out jointly by the management and the Tavistock Institute of Human Relations. The design of the General Foods pet food factory in Topeka, Kansas, was also a joint effort involving researchers, management and employees. The strategy used included changes in management philosophy, attitude changes among various categories of employees and - compared with the traditional set-up - changes in job design and work organisation aimed at creating an innovative work organisation.

An attempt was made to design jobs and work organisation so as to give the employees, including managerial staff, opportunities for learning and to encourage them to learn.

Roughly speaking, the strategy was to build an organisation for learning rather than for production, so, however, that learning would take place in the production of goods. The Topeka case is more fully described in Ketchum, L. D., Diffusion in the General Foods Corporation, International Conference on the Quality of Working Life, 1972 (to be published by MIT Press).

Strategies for change - behavioural science

The various strategies exemplified by the cases described in the reports can be traced to different "schools" of behavioural science. The cases which, either from the outset or eventually, have placed greatest emphasis on leadership development, changes in management attitudes, etc., have been greatly influenced by McGregor, Herzberg, Likert, etc., in the American tradition. The cases which

1) To be published by MIT Press.

have stressed changes on the shop floor have been inspired mainly by European developments. Expressions like joint optimisation of socio-technical systems, autonomous work groups, etc., were coined in research by men like Trist, Emery and Thorsrud

Change - learning - change

Even if the inspiration behind the various cases can be traced to different schools of thought, an unbroken thread of work leads from either philosophy eventually to the other, as the cases show. Another common feature is the emphasis on learning, which may be more or less planned, but which always involves interruptions and conflicts as learning proceeds.

A synthesis of the different strategies may possibly be found under the heading of learning. Unlike the strategies of change developed by scientific management, which can briefly be said to involve:

- testing of different solutions;
- evaluation of these solutions;
- application of the best solution; and
- evaluation of its operation, etc.,

those in the case reports involve the initiation of more or less well-integrated processes.

Attempts to solve an apparently clear-cut problem generate changes elsewhere in the enterprise for other categories of employees and changes in management functions. For those concerned, whether they belong to management or to the rank and file, the change process involves the learning of new job roles, new relations and new working methods.

TOOLS - HELPING THE CHANGE PROCESS

In most of the case reports and in the discussions at the Seminar a distinction was made between a diagnostic or planning phase and an implementation phase. Mention was also made of certain aids or tools for diagnosis of the situation and (in some cases) other aids in the implementation of changes. This division of the change process is, however, more theoretical than real. In actual fact the process begins whenever analysis of the existing organisation begins, and the aids used in this connection are also aids for change.

Attitude surveys

It is perhaps the report on Shell Australia, where a "survey feedback process" was used, which brings out this point most clearly.

The results of a comprehensive attitude survey are returned to different management groups for interpretation, evaluation and the discussion of action. The discussions in these groups and the attempts to "diagnose" the problems also imply a commitment to change and are in themselves a means of attitude change.

Even in the Norwegian case(1) an attitude survey was used to ascertain the attitude of the employees to various working conditions and conditions of employment, and the findings were used in discussions between representatives of the management and the employees to define the problems and propose action. In themselves these discussions are also a change from previous methods.

COMMUNICATIONS - DIALOGUE

In this context neither surveys nor other "analysis techniques" are tools or measurement techniques in the proper sense of these terms. Instead, they are aids which can be used to institute a dialogue between those who are concerned and who will co-operate in the change process as it continues. For this same purpose of establishing communications or a dialogue, more or less permanent groups were set up in most of the cases to discuss how organisational development could be brought about and what purpose it should serve.

The tools are therefore of lesser importance and vary according to the problems taken up. In the Philips case and in the Swedish cases the discussions dealt initially with the production process and the possibilities of bringing it under better control, and accordingly production descriptions and production data were the tools used. In other cases greater attention was paid to leadership styles and "the impact of bureaucracy", and adequate approaches were adopted for this purpose. Mangham et al., op. cit., contains examples of these, taken from ICI (Petrochemicals Division). In ICI a number of different techniques, such as 'T' groups, Coverdale training, management by objectives and management job descriptions, were used.

Socio-technical analysis - role analysis

The socio-technical analysis and role analysis mentioned in the Shell UK report are amply described by Hill.(2) These analyses are mainly concerned with the production process and have been used wholly or in part in a number of organisational changes.

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1) OECD, op. cit., p.55.

2) Hill, P., Towards a New Philosophy of Management, Gower Press, 1971.

The primary purpose of socio-technical analysis is to ascertain the technical constraints in the production process, on the one hand, and the social organisation (the work organisation), on the other, with a view to finding a better combination of work organisation and technical requirements. In the nine points making up the socio-technical analysis not only the internal organisation situation but also the enterprise's relations with its environment and the situation in that environment are regarded as important situations to be "diagnosed". A time or development dimension is also built into the nine points.

Description of structural changes

The importance of making use in the change process of material and analyses describing relations between the enterprise and its environment is clear from the Olivetti report.

We read on page 111 that "the real causes of the change have not been due to principles and values but to some structural modifications", and some structural conditions of this kind, such as changes in the commercial markets, changed product design, labour cost factors and changes in labour force characteristics, are discussed.

Negotiations

Another point emerging from most of the reports is that in this context negotiations between management and representatives of the employees are also a useful tool in the change process.

"Common sense"

The Seminar discussed fairly different aids and tools. Some of the participants doubted the usefulness, inter alia, of approaches and techniques to influence attitudes. The reason for this was the feeling that common sense and practical discussions focussing on production problems had made it possible to obtain better or just as good results with regard to advances in work organisation. It was generally agreed in these discussions that one had to start with existing problems in organisation, but the view was also expressed that various techniques had clearly proved their value in starting a process of change.

The discussions on various aids and their evaluation were really concerned with the role of behavioural scientists and consultants in the changes affecting management.

THE ROLE OF THE BEHAVIOURAL SCIENTIST-CONSULTANT

Virtually all the reports name one or more social scientists as the inspiration behind the changes described. These are well known names in this field, e.g. McGregor, Herzberg, Likert, Emery, Trist and Thorsrud. The "products" launched by these authors are partly concepts and theories or ideas respecting organisation and human behaviour, partly methods and techniques for bringing about change and partly empirical findings of their own and other people's research. Although social science and social scientists were generally acknowledged in the discussions as a source of inspiration, participants were not equally agreed as to the best way of using the experiences provided by social science.

Social science - do consultants weaken management?

The first topic discussed was the role of social scientists as consultants in the change process. It was agreed that decisions on and responsibility for changes are a prerogative of management, but in the papers and in the discussions the question was asked whether influences exerted by social scientists acting as consultants did not weaken management's position in this connection. Some instances were reported in which external researchers or consultants had taken a fairly active part in change projects and in which management had had considerable difficulty in taking over the initiative when the external consultants eventually withdrew. It was emphasized in the discussions that, even if external consultants are used, changes should be based on management initiative and on the organisation's internal capacity to carry them out. It was felt that this position as such is applicable in all circumstances to the use of consultants or external specialists. Management should, therefore, plan in advance how the assistance of consultants is to be used and should be quite clear about its own capacity to avail itself of expert assistance.

Social science - do consultants complicate the problems?

Management representatives also wondered whether inherently practical problems and questions were not unnecessarily complicated by collaboration from social science consultants and researchers. It was also felt that expressions and terminology used in the social sciences are a kind of professional jargon and that for this reason managerial staff who are not social scientists have trouble in using researchers' and consultants' reports. This was one reason, it was said, why experiences reported by social scientists had little impact. The conclusion reached in a few contributions to the

discussions was that in these circumstances it was better that changes should be a matter for line management or production technology consultations or that experiences should be communicated between such groups without the collaboration of social scientists.

Social science - growing significance

These views were answered in contributions by social scientists attending the Seminar and by managers, who advanced arguments of two kinds. On the one hand it was pointed out that experiences provided by social science and social science experts were important for management. Comparisons were made with other specialist groups. It was felt that, just as management needs to avail itself of experts in metallurgy or advertising so it must avail itself of social scientists. The question will then be one of the consultant's capacity and the organisation's need or of how the consultant's experiences are used.

The second kind of argument is centred on this latter point. It was stressed that behavioural scientists can be of very great use to management, e.g. as consultants with special techniques, such as surveys or group training and the like, as catalysts in changes in the enterprise or in management, as umpires, i.e. third parties in different kinds of conflict, and as educators or "change agents" within the organisation.

Some illustrations

The various reports also illustrate how social scientists have operated in the examples described and how people have availed themselves of their experiences.

Examples of collaboration by external consultants are given, inter alia, in the General Foods case report, in which the consultant participated over a period in a form of leadership development and in which he subsequently collaborated in designing the "experimental factory" in a multi-disciplinary approach, jointly with the technicians and management of the enterprise.

Shell also gives instances of relations between external consultants/researchers and the management and employees. Social scientists from the Tavistock Institute of Human Relations co-operated closely with those concerned in the enterprise in carrying out the changes in Shell UK, the elaboration and formulation of a management philosophy, study of this philosophy at the firm's different organisational levels and changes in job design and work organisation in different production units. Shell Australia carried out survey feedback processing and planning conferences with the help of external consultant/researchers.

Examples of internal consultants or researchers on the staff of the enterprise are given, inter alia, in the ICI and Olivetti case reports. In ICI the primary role of the consultants was to act as educators and catalysts. For instance, they worked with various departments and groups on MBO (management by objectives) and in so doing also trained "change agents" in various units. Together with other technicians they also played an active part in change activities, e.g. in restructuring the work in a sales department and a development department.(1)

In Olivetti behavioural scientists on the staff of the enterprise showed by their studies connections between job content, the degree of division of labour and a tendency to apathy among the employees, with economic consequences for the enterprise. The studies were planned and carried out by behavioural scientists, but in close co-operation with personnel officers and technical managers. The findings of these studies, combined with material derived from production technology circles, formed one of the bases for change in Olivetti. The changes are also followed up with the help, inter alia, of the social scientists within the company and in this way experiences are acquired for decisions on further development.

Internalised social science concepts

In the Swedish cases reported on at the Seminar social scientists were not used as consultants. Instead, the enterprises were assisted by consultants from the Swedish Employers' Confederation with a production technology training. By means of training they internalised behavioural science concepts and ideas and in practical work combined this with previous occupational experience. According to some contributions to the discussion it was felt that their production experience made it easier for these consultants than it would have been for social scientists to communicate with management in the enterprises. Their main role was to participate in planning discussions of changes in various enterprises and to follow up and describe changes which had already taken place.

Management's internalisation and use of behavioural science concepts and ideas was also described in the Sadolin and Holmblad case report.

Views generally accepted at the Seminar were that the social sciences are increasingly important for management and that experiences derived from them can be used in different ways. Management can internalise social science concepts and ideas or theories, as in the Sadolin and Holmblad case or the Swedish production

1) Paul, W. J. et al., "Job Enrichment Pays Off", Harvard Business Review 47, 1969, pp.61-78 - reproduced in Davis, L. E. and Taylor, J. C., Design of Jobs, Penguin Modern Management Readings, 1972.

technology consultants and Philips, for implementation in the organisation. Management can also use social scientists as external or internal consultants for diagnostic activities in the organisation, for different ways of implementing change and for evaluating changes and their consequences, but consultants cannot assume management's power to decide what changes will be made or its responsibility for these changes.

Management's role in organisational research

The research which, according to the reports, inspired the various experiments, involved some kind of co-operation between researchers, management and employees. Thus the research findings were produced jointly by researchers and "customers", an important difference between this research and research in, say, the natural sciences.

"...it is often contended that the social sciences should first proceed in isolation, and then one day, when they have advanced far enough in their basic work, they will become capable of developing practical applications. It is further contended that this first stage will be carried through by a few brilliant minds (as it was in the natural sciences) and that, until this stage is over and practical utilisation of firmly established knowledge becomes possible, little is to be expected."(1)

There is not the same distinction in the social sciences between the stages of research, development and implementation, which are characteristic of natural science and engineering science. In the social sciences these stages merge in such a way that, inter alia, a considerable amount of development often takes place in connection with implementation, or research and implementation take place simultaneously, as is shown, for instance, in the Shell Australia and Shell UK reports (Hill, op. cit.) and in the Norwegian co-operation project (Emery and Thorsrud, op. cit.). This affects the role of the researcher and that of management, entailing mutual respect. For the researcher the enterprise is not an object for research in the natural science connotation, but an entity made up of management and employees having intentions, values and possibilities of action. For management the researcher is not a consultant but a fellow producer of knowledge who must also be loyal to his scientific ideals and traditions.

Because of the difference between the natural sciences and the social sciences in the research process, management must also feel

1) Eric Trist, Collaborative Social and Technical Innovation, presented to the McGregor Memorial Conference on Organisation Development, M.I.T., 1967 - published in Emery, F. E. and Trist, E. L., op. cit., p.111. "Nothing could be more misleading than this viewpoint..."

responsible for and collaborate in research in the social sciences, inter alia by making enterprises increasingly accessible to research.

EXAMPLES OF CHANGES THAT HAVE BEEN REPORTED

The participants in the Seminar asked the rapporteurs for information on the changes actually effected in the various cases, and felt that the reports had not been sufficiently informative on this point. A number of clarifications were also given in the discussions, but the questioners were referred directly to the various enterprises for a more detailed description.

Participation in management functions

Nevertheless, the changes described have a common denominator. In one way or another they implied broader employee participation in management functions. In this context management functions involved the planning and organising and the follow-up and control of operations.

In the reports, increased employee participation in management functions concerned the initiation and execution of major changes, on the one hand, and ongoing day-to-day activities in production, on the other. In both cases methods were adopted which allowed direct participation by individual employees and/or indirect employee participation through representatives.

So far in discussing the reports and the Seminar we have been dealing mainly with various aspects of participation in change processes.

According to the reports the measures taken to bring about increased participation in day-to-day activities consisted of changes in two or more of the following spheres: job design and work organisation on the shop floor and at supervisory level and participation through representatives.

Job design on the shop floor

Examples of changes in job design and work organisation on the shop floor are given, inter alia, in the Swedish cases, the Olivetti case and the General Foods case. The Swedish automobile factory case(1) illustrates clearly how changes in job design and work organisation may entail changes in production technology, and how it is possible with a given production technology to choose varying job design and work organisation.

1) OECD, op. cit., p.73.

The production technology pattern consisting of a main loop on which wagons loaded with all the components for the engine moved around mechanically, and of side tracks on which assembly work could be carried out, was one alternative change in production technology necessary for greater job satisfaction. Once the production technology solution has been found, different kinds of job design and work organisation can then be chosen.

In principle the assembly work can be done by one person or shared among two to six persons. In a work loop the workers may learn more and more operations, be allowed to decide how the work will be allocated and whether they wish to rotate between different operations or remain on particular operations, be allowed to decide on the location of rest breaks, etc.(1) The arrangements made possible by the production technology solution are also less vulnerable than the conventional assembly line. The number of working loops in operation can be varied according to the manpower supply, and the manning of the various working loops can be varied according to the skills or the available personnel or, as stated in the report, "...the work organisation can be continuously suited to the current structure of qualification within the assembly department and within the various groups in this department".

Changes of the kind described in, for example, the Swedish, Olivetti and General Foods reports not only involve changes in job design and work organisation on the shop floor, but also affect the design of the supervisory functions. The case reports also give instances of more direct attempts to bring about changes in job design and work organisation at supervisory level.

Job design at supervisory level

In ICI these changes were effected partly by a reduction in the number of layers of management together with an increase in the spheres of responsibility and, as the report puts it, changes in "most of our traditional views on the nature of management and the nature of the supervisory task".(2) The changes involved, inter alia, increased employee participation in goal formulation, planning and control of operations, e.g. through team approaches and management by objectives of different kinds. A more detailed description of changes made in supervisory functions in the ICI Petrochemicals Division is given in Mangham et al., op. cit.

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1) Compared with previous work organisation (a straight assembly line) the new system allows greater participation, which can also be gradually expanded. For further description of the case see Norstedt, J. P. and Agurén, S., The Saab-Scania Report, Swedish Employers' Confederation, 1973.

2) OECD, op. cit., p.22.

Participation - formal representation

The Bekaert Group report(1) gives examples of changes in representative participation. The aims of the "work unit committees" were to "encourage participation through information and dialogue between the management and workers on the shop floor". The report describes how the system was expanded by the setting up of "small permanent working parties" which, among other things, deal with job design and work organisation problems. The function of these working parties is both to initiate and to support production technology changes and organisational changes, which in turn leads to increased direct participation by the individual employee.

Connections between changes

These and other examples from the reports of concrete changes carried out show, inter alia, that changes cannot be made in isolation. Changes in job design and work organisation are connected with changes in supervisory functions and vice versa. Changes in representative participation may lead to changes in direct participation, and in turn affect supervisory functions, etc. There are both theoretical and practical difficulties in pinpointing the specific change or changes in a particular case and claiming that one or more specific changes has or have had a specific effect on productivity or job satisfaction. The common ingredient of changes in the various cases is, however, obvious; it is increased participation in management functions. It is also true that the changes are increasingly aimed at satisfying the psychological job requirements which were formulated by Emery and Thorsrud (1969) for the Norwegian projects and which were referred to in the discussions.

According to Emery and Thorsrud these psychological job requirements are:

- the need for a job content entailing more than mere endurance and involving a certain minimum of variation, even though this does not necessarily mean that something new should always be happening;
- the need to be able to learn something at work and to be able to go on learning;
- the need to be able to take decisions, at least within a limited sphere which the individual can call his own;
- the need for esteem, at least a certain degree of mutual understanding and respect at the workplace;
- the need to see the connection between work and the external environment, at least sufficient to show a certain conformity

1) OECD, op. cit., p.83.

between a worker's job and what he considers useful and valuable; and,

- the need to see the job as compatible with expectations for the future, without the latter necessarily implying promotion.

On the basis of these generally formulated requirements those who carried out the Norwegian experiments formulated more specific guidelines for changes in job content for both individual and group work (Emery and Thorsrud, 1969).

According to several contributions to the discussions, changes in job design and work organisation should be accompanied by (and depend on) the development of wage structures supporting the desired change.

Some experiences of this can be found in Lindestad, H. L. and Norstedt, J. P., Autonomous Groups and Payment by Result, Swedish Employers' Confederation, 1973.

PREREQUISITES FOR AND/OR EFFECTS OF CHANGES REPORTED

A number of different factors, e.g. the roles and attitudes of management were instanced in the discussions as premises for the changes reported. At the same time it was clearly understood in the discussions that changes in the roles, attitudes and philosophy of management were also an effect of the changes carried out.

It was also pointed out in the discussions that changes carried out had also led to changes in working methods and in some cases to new work content for management. What the discussions reflected was an interdependence between management attitudes, etc., and structural conditions in the organisation.

It may therefore be difficult to tell from the reports and the discussions what was a premise of what and what was an effect of what.

This is also attributable to the fact that the changes described in the reports are change processes which, once developed, became the subject of evaluation and corrective measures. If the "effect" of changes carried out did not come up to expectations, measures were taken to improve the result. Thus what the evaluation shows to be an effect of earlier measures becomes a premise for the next phase of the change process.

Management role

Speakers at the Seminar pointed out the "leading role" played by management in organisational development and management's responsibility for the consequences of the changes carried out.

From management's point of view organisational development has long been a relatively limited question of techniques for improving employee motivation.

With the help of or in conjunction with behavioural scientists and other specialists, management has sought new techniques and tools for this purpose, with little or no progress. What is instanced in many of the reports to the Seminar is, however, a qualitative change in management and organisational philosophy. The question is not how to find new techniques for motivating employees to do a better job, but how to build a viable socio-technical organisation.

One of the more pronounced examples of this is given in the General Foods report, but the view was also expressed in most of the other cases and in the discussions that the management role (instead of being a matter of planning, directing and controlling work and workers, as before) was becoming a matter of providing facilities for learning. It is becoming more a service at the disposal of different production units which are increasingly self-regulating. Thus the service function includes collaboration in goal formulation for a unit, supplying relevant information to the unit and ensuring adequate functioning of the unit.

Such a change of role requires (and leads to) not only a change in management philosophy, but also changes in the tools of management, such as tools for economic budgeting and control and tools for production planning, preparation, measurement and control in order to facilitate self-regulation and learning within the parts of the organisation.

A change of role of the kind described in the cases is a slow process which also involves learning by management. In some cases it can cause personal distress and quite often it provokes psychological resistance. The reports contain examples showing that role changes can sometimes even prove impossible and that in a number of cases this has led to transfers of supervisors and managerial personnel.

First-line supervisors are faced with special problems, *inter alia* because their existence is apparently threatened by the organisational developments described. Instances were given in the discussions of both existing and planned factories which operated or would operate without supervisors. The consensus on this point was, however, that the post of supervisor would remain, but that job content and role would be substantially changed. Even though no formal changes are adopted in the supervisor's role there are usually informal changes, as described in the Olivetti report, which require greater technical proficiency and better service to the production units and place less emphasis on superintendence and control of subordinates.

Staff roles

An essential change in relations between staff and line is described as both an effect of and a prerequisite for changes in job design and work organisation on the shop floor. "Basically it is the interaction pattern between staff and line that gets modified" says the Olivetti report, while the Bekaert Group report says, *inter alia* in discussing the working parties, that "people will no longer accept changes imposed by consultants". This is also true of internal consultants or specialist functions. The discussions on the Swedish cases and the Philips case, among others, touched on the role of the production engineers. Participants told how, at the start of these innovations, the collaboration of production technicians and other specialists was avoided. Ultimately, however, they were brought into the experiments, being given the role of consultants to the production unit, which was able to benefit from their special knowledge and methodology.

The role of the trade union

The significance of the trade union's collaboration in the process of change was pointed out in practically all cases. While it is clear that the union did not initiate or in any way carry out the changes, it did, in most cases, actively collaborate in the process in one way or another.

The attitude usually adopted by the union, at least at the start, was one of hesitation. In the reported cases, where the changes concerned job design and work organisation on the shop floor and involved a rapprochement between management and workers the union's hesitation was attributable to apprehension that it might lose its influence as a result. As someone pointed out in the discussions, individualisation of the work force may mean a weakening of the union's position, which in turn may lead to a supposed loss of various antages of union membership and perhaps less security of employment.

Another somewhat different reason for union hesitation would seem to be that, in the view of the unions, improvements in job satisfaction are usually the result of improvements in wages and other conditions of employment, which means that the job itself is considered less relevant to job satisfaction.

Quality of working life, a problem for the union

In so far as quality of working life and humanisation of work are connected with job design and work organisation the great interest in these questions is a problem for the trade union movement.

Traditionally the unions have applied their greatest energies to improving wages and other conditions of employment which can be expressed in time and money, matters which lent themselves to negotiation and to formulation in both local and national agreements. Questions of job design, work organisation and other conditions of the work itself are less easy (if not impossible) to codify in industry or national agreements.

Recourse must be had instead to local solutions adapted to present-day technology and specific situations, something which requires highly decentralised union activity and local union initiatives in what are to some extent new problem areas.

Local negotiation and co-operation

In the reported cases union collaboration was brought about by means of local negotiations or joint consultation, subsequently resulting in a more positive attitude on the part of the unions. Union collaboration then developed along different lines, inter alia according to the national trade union tradition and the pattern of relations between management and union representatives.

One example showed how the union consciously promoted changes in job design and work organisation through negotiations on conditions of employment (upgrading) and job security. These negotiations were followed by new negotiations in which agreements governing different aspects of job rotation and job enrichment were concluded.

Another approach was adopted in the Swedish cases. In them, according to the reports, the employers and workers, after first "arranging" wages and other conditions of employment by negotiation, were then able to co-operate in solving problems relating to job design and work organisation. Any disputes that arose were referred to the established procedure for negotiation between the parties.

Matters for co-operation become matters for negotiation

Participants in the discussions mentioned differences between different countries in trade union traditions, and instanced the co-operation between management and employees in the Scandinavian countries as exceptionally conducive to organisational developments of the kinds described. The statements did not, however, indicate any lessening in those countries of the traditional agreement-formulated distinction between matters for negotiation, on the one hand, and matters for co-operation, on the other. In Sweden, at any rate, what used to be matters for co-operation, e.g. questions of job design and work organisation, are in process of becoming matters for negotiation.

This trend may be seen as a consequence of the general changes in industrial society, which were discussed at the beginning of this

report. In an increasingly affluent society relatively new problems gradually become a matter of public concern.

The changes in society and in living conditions also affect the emphasis of the activities of the trade union movement. As a representative organisation the union must defend the interests of its members in these relatively new problems, and in such a situation it is likely that union interest in job design and work organisation will grow and that union organisations will try to strengthen their positions on these questions by action at national, industry and local level.

DISSEMINATION OF EXPERIENCE

All case reports spoke of gains in productivity and economic improvements in one form or another, together with greater job satisfaction. If these evaluations are correct, why is there not a greater dissemination of advances in work organisation of the kinds reported? One of the questions raised at an early stage of the discussions was why, for instance, the large multinational enterprises which submitted reports to the Seminar did not implement these advances throughout.

The answer given by the rapporteurs was that one cannot simply introduce changes of this kind to order. They must come about on a voluntary basis and generally in response to changes or proposed changes in the environment of the organisation.

Another rapporteur believed in the light of his own experiences that dissemination would come about, or would be made easier:

- if management and the union have a natural motive for change;
- if there are concrete examples showing what has been done and what can be done;
- if there are descriptions of such examples which appeal to those in enterprises who have the power to make changes, i.e. managers at different levels; and
- if there are effective methods of or channels for disseminating experiences and descriptions to "customers".

This does not mean, however, that management can take solutions from a concrete example and introduce them in its own organisation, but that experiences afforded by concrete examples can stimulate management to take suitably designed measures in its own organisation.

Most of the reports give examples of the dissemination of experiences within enterprises, between different units, and between different categories of employees and posts. The General Foods report focuses attention on questions of dissemination within the enterprise.

Dissemination at national level

The Seminar also discussed the dissemination of experiences at national level. In the Norwegian "co-operation project" (Emery and Thorsrud, 1969) the Norwegian Employers' Confederation, the Norwegian Trade Union Federation and the State jointly supported the experiments in democratisation of the workplace. It was thought that dissemination of the experience acquired in these experiments had had a powerful impact, particularly in Sweden. The activities of the Swedish Employers' Confederation have included a large number of regional seminars at which management and local unions have collaborated in various "model enterprises". Managers, production technicians and personnel officers from various enterprises attended these seminars, at which they learned by means of lectures and discussions of the experiences acquired.

The introduction of the 1972 Agreement on rationalisation between the Swedish Employers' Confederation and the Swedish Confederation of Trade Unions (published in English) was mentioned as another example of the dissemination of the ideas and ideals behind advances in work organisation. These two central organisations organised jointly a large number of conferences in various parts of the country, at which they informed local managers and union leaders of the Agreement and its implications.

The commitment of the central employers' and workers' organisations in Scandinavia has not merely resulted in their arranging opportunities for an exchange of experiences, but has also involved national sanctioning of these advances in work organisation and the underlying values.

In a number of countries the national productivity institutes have collaborated in the dissemination of information at national level. The United States Commission on Productivity has changed its name in order to be competent for both productivity efforts and improvement of the quality of working life. This latter question is on the 1973 agenda of the American Assembly.

Dissemination at international level

International enterprises play an important part in advances in work organisation, partly through internal change agents, as stated in many reports, and partly through the internal training in management which they conduct. Another important factor in initiating activities in different countries is the international conferences on advances in work organisation which are being arranged on an increasing scale by various organisations. OECD plays an important part in this, not least because of its joint activities with the

social partners. Conferences of the kind described in this report result in a very large number of study visits among participating countries and in personal communications which are extremely important for the further dissemination of experience.

FINAL COMMENTS

In the final discussions at the Seminar one of the participants expressed a hope he had shared with others, namely that at the end of the Seminar it would be possible to define clearly some new principles for better management of people and work organisation. "In particular I hoped to learn about practical techniques to apply these principles in action, about measuring their effectiveness, and some evidence of results which might be persuasive if my own organisation were to go this way". These expectations were disappointed. Instead, it was noted in the final discussions that one of the most striking facts about the various case studies was the great variety of the approaches adopted in the circumstances that gave rise to them. It was stressed that there is no single solution to the problem and, to quote one participant, "I think it would be wrong for us to imagine that there might be".

The great variety of the approaches reflect the fact that the reports are concerned with examples of real-life situations, with management of change. The examples are taken from different management bodies in different companies and in different countries which are trying to solve different specific problems, but with the shared general aim of advancing the ways of organising work so that human needs, satisfactions and interests could be met in the work situation without sacrificing economic goals.

Generally speaking, three types of change were mentioned in the reports:

- changes in management attitudes and functions;
- changes in job design and work organisation on the shop floor; and
- changes in formal representative systems.

These can be traced to different schools of thought in social science.

The reports and the discussions told of improvements in productivity and job satisfaction resulting from the changes made in work organisation. These various attempts to "debureaucratise" work organisation are management's attempt to adapt the organisation to prevailing or anticipated situations on the labour market and in society generally (changes in material standards, education, attitudes and values), on the one hand, and to changes in the enterprise's

competitive situation (faster product rotation, more complicated products, changed manufacturing technology, uncertain markets), on the other. Together these changes entail increasing flexibility in work organisation. Adjustment is a search for design principles for work organisation which will give increasing flexibility and constitute an alternative to those formulated in scientific management and bureaucracy doctrines. Adjustment is also a search for means, based on something other than authority, supervision and control, of co-ordinating and regulating the employees' contribution.

The design principles are not formulated in the reports. The measures described are necessary but not sufficient to bring about the desired adjustment. The changes reported have taken a long time. The trend of the changes is indicated in the case reports and the adjustment process will proceed.

Many of the contributions to the discussions, from both management and social scientists, did, however, reflect concern that advances in work organisation are too slow, which is consistent with Trist's (Emery and Trist, op. cit.) concern and formulation of the mismatch between the development of information technology - which makes it possible technologically to handle larger systems - and (the slower) change in cultural values and organisational philosophy towards decentralisation, self-regulation and face-to-face relationships. If Trist is correct in thinking that the post-industrial society is structurally already present and if Emery is correct in thinking that work organisation will play a leading part in forming our future organisations and man-to-man relationships, then management has a vital responsibility for accelerating advances in work organisation.

This responsibility will be more easily borne on the borderline between the industrial society and the post-industrial society where we can regard ourselves as a lost generation if Phil Herbst is correct in his view that "the product of work is people".

"The assertion that the product of work is people is evidently either false or a gross oversimplification. For one cannot entirely disregard that as a result of work we also produce cars, colour TV and baby napkins, not to speak of papers for conferences, all of which may have some value as well".(1)

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1) Herbst, P. G., The Product of Work is People (mimeograph), Work Research Institutes, Oslo, 1972.

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